The Appalachian Spotter

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National Weather Service
Morristown TN

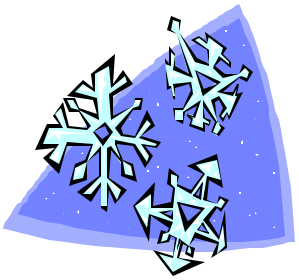
Report All Hazardous Weather

Rich Pollman, Senior Forecaster

The winter season is fast approaching the region. The National Weather Service needs your spotter reports during all types of hazardous weather. Not only do we need your continued reports of severe weather, but also your reports of snow, sleet, freezing rain, non-convective high winds, and floods. Please use the following guidelines for reporting:

SNOW	1 INCH OR MORE PER 12 HOURS
SLEET OR FREEZING RAIN	WHEN TRAVEL BECOMES HAZARDOUS, REPORT ICE ACCUMULATION IF POSSIBLE
NON-CONVECTIVE HIGH WINDS	MEASURED OR ESTIMATED WINDS OVER 50 MPH, ANY DAMAGE CAUSED BY WIND
RAIN	1 INCH OF RAIN DURING AN EVENT
FLOODING	WHEN FLOODING THREATENS ROADS OR PROPERTY

There are a number of ways to report this information to the National Weather Service (NWS) in Morristown. You can use the toll-free number that rings into the NWS office twenty-four hours a day. You can use the NWS Morristown web page at **http://www.srh.noaa.gov/mrx** (see related article on page 2). You may also go through your local county warning point, or your local amateur radio net if applicable. The reports that you provide to the NWS are valuable to our warning and forecast operations. We look forward to this upcoming winter season knowing that your reports will help us in our mission to protect life and property.



A Warmer and Wetter Winter?

Rich Pollman

So what is in store for southwest Virginia, east Tennessee and far southwest North Carolina this winter. Well, the latest seasonal outlooks available from the Climate Prediction Center (CPC) suggest a better that average chance of a warmer and wetter winter season. These forecasts were issued on October 14th. The winter season is defined as the months of December, January and February.

The CPC gives the region a 43 to 53 percent chance of having above normal temperatures, compared to a 33 percent chance of average temperatures and a 13 to 23 percent chance of below normal tem-

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Points of Interest:

* Winter Weather Awareness Week is November 14th-20th
* Toll-free Spotter Number for Spotter Reports Only
* General Weather Information Number **423-586-3771**
* **www.srh.noaa.gov/mrx**

Measuring Snowfall

Howard Waldron, Warning Coordination Meteorologist

Snow observing can be one of the simplest, and is generally one of the most misunderstood weather elements to observe. Some people like to get the greatest depth possible, so they measure around till they find it, and report that. To correctly measure and report snow depth, you need to measure several locations in open exposed areas and average these measurements to get the accurate snow depth. If you want to get the greatest depth, that is fine,

but be sure that this is reported as a drift, not the snow depth. If you took a number of measurements and found the average to be 10 inches with the greatest 19 inches, report snow depth of 10 inches with drifts to 19 inches. Like I said, simple but easy to misunderstand.

A Call for Local Pictures and Videos

Rich Pollman

For years spotters have been trained with slides and videos featuring storms from the plains states of Texas, Oklahoma, and Kansas. These slides seem to suggest that spotting is not too difficult because there are rarely blocked views of storms from trees, hills, or reduced visibilities from haze or fog. However, we know that spotting in southwest Virginia, east Tennessee and southwest North Carolina can be much more difficult. That is why we would like to get local pictures and videos to incorporate into our spotter presentations.

> Pictures and videos showing shelf clouds, wall clouds, over-shooting tops, mammatus clouds, storm damage, and yes, tornadoes, are all wanted.

If you have any photographs or videos of storms and their structure, send it into the NWS Morristown office. We will make a copy and then send the photographs or video back to you. As a guideline for what we would like, use the previous spotter presentations. Pictures and videos showing shelf clouds, wall clouds, over-shooting tops, mammatus clouds, storm damage, and yes, tornadoes, are all wanted.

Web Page Updated

Rich Pollman

The NWS Morristown web page, **www.srh.noaa.gov/mrx,** is no different than any other web page, it is always being updated and improved. Recently the Skywarn web page was updated with several new features. You can now submit spotter reports through the web page. However, the reports that you submit should not be time sensitive reports such as on going severe weather (3/4 inch diameter hail, 58 mph or greater winds, or a tornado). Reports through the internet can take several hours to reach the mailbox. Therefore, submitted reports should be storm damage, long fused events (snow, ice accumulations, rainfall amounts, etc.), and "day old" severe weather reports.

New features have been added to the MRX Skywarn Web Page

A listing of upcoming Skywarn training sessions is also on the Skywarn web page. The training classes listed on the web page will only be the sessions that will be open to the general public.

There will be short reports on severe weather events under the "Significant Severe Weather Events" link. Currently only the squall line event of May 5th and 6th is on the web page.

Finally, there are several links to items that interest spotters. There are links to spotter brochures, other safety brochures and NWS publications, severe weather outlooks, and other spotter groups.

A Chance of a Warmer and Wetter Winter

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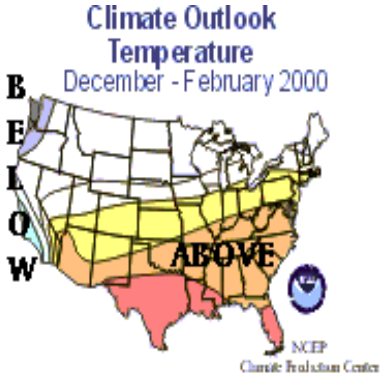
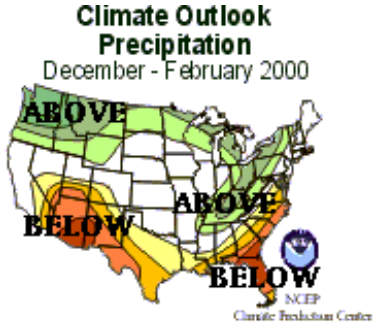


peratures. The CPC gives the region a 33 to 38 percent chance of having above average precipitation this winter. This compares to a 33 percent chance of having average precipitation and a 28 to 33 percent change of having below average precipitation.



In a statement issued on October 26th, the CPC indicated that the forecast for the Tennessee River Valley was for warmer and wetter than normal conditions, an increased number of heavy precipitation events, an increased risk of severe winter weather, and above normal snowfall. One must remember that these are just forecast for averages during a three

NWS Morristown Flood Program

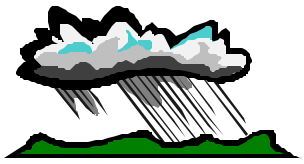
Brian Boyd, Service Hydrologist

I am a meteorologist by degree, but I currently serve as the service hydrologist for the weather office in Morristown. I am originally from Colorado, and I have worked for the NWS in Seattle, Salt Lake City, Oklahoma twice, and now here in East Tennessee. Each of these assignments has given me experience in very different climates, and in mountainous areas. I plan on staying in this area, which my family and I love (the southern Appalachians are the best kept secret in the world!). This is a very flood prone region and so I'd like to discuss a few things about our flood warning program.

The rainy season is coming quickly and now is the time to begin keeping any eye on rivers and creeks. Soils cannot hold as much water now, and foliage is dormant, making excess runoff from heavy rains more likely.

Four kinds of flooding are possible in our region. First, flash flooding occurs when heavy rains fall in a short time. Normally, flash flooding happens less than six hours after the heavy rains. Flash flooding usually happens along smaller streams and creeks, or in low lying places even without nearby water. Sinkholes can also flood quickly. Flash flooding is the most dangerous because it happens so fast and can wipe out everything in its path. If you see flash flooding happening, or if you see heavy rains falling in a place you know is flood prone, get away quickly! You can replace property, but you cannot replace you and your family. Once you are safe, call local law enforcement authorities, then call the National Weather Service toll-free to report the problems (please do not give this number to anyone).

Second, "river" flooding occurs in established river channels and usually (but not always) takes longer than six hours to materialize. The larger the river channel, the longer the flooding takes to happen, and the longer it takes to go away. The mainstem of the Tennessee River can take days to finally get out of banks after heavy rains, but will also take days to go back down again. If you see flooding like this happening, it's a good bet that authorities already know about it, but we encourage you to call them with specific information. Then please call us toll-free with your report.



Third, urban and small stream flooding occurs during heavy rains in urbanized (usually paved over or concrete) areas where water simply can't soak in, and along smaller streams that can't hold any extra water. This kind of flooding is not normally dangerous to life or property, but can be a nuisance to travel. However, much embarrassment and even some damage and fatalities have occurred when people try to drive or walk through ponded water.

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Severe Weather '99

Rich Pollman

The table below indicates how the NWS at Morristown performed during this past severe weather season, from January 1st through September 30th. The table only includes warnings and reports of Severe Thunderstorms and Tornados. The table lists the number of warnings issued for each county, the number of warnings that were verified with your spotter reports, the lead time, and the number of missed events. The lead time can be described as the time between when we issue a warning to when we received the first report from the spotters. A missed event is when a spotter report comes into the NWS office, but we don't have a warning out at that time. However, these reports are very valuable since they lead to accurate warnings for downstream communities. The last line lists the total for this year for the entire County Warning Area (CWA). We can take these numbers and put them into some more statistics. For 1999 for our CWA, we detected 90% of all severe weather, and had a False Alarm Rate of 24% on our warnings. This puts our Critical Success Index at 70%.

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County	Number of Warnings	Warnings Verified	Lead Time (minutes)	Missed Events
Anderson	6	6	20.4	1
Bledsoe	8	6	13.2	0
Blount	14	11	10.9	2
Bradley	8	6	12.0	3
Campbell	6	5	21.3	0
Carter	1	1	46.0	1
Claiborne	6	4	16.4	1
Cocke	7	2	14.5	0
Cherokee, NC	6	4	17.6	0
Clay,NC	6	3	17.7	0
Grainger	9	5	16.7	1
Greene	9	6	20.5	0
Hamblen	10	10	15.5	1
Hamilton	12	9	17.0	2
Hancock	5	3	30.7	0
Hawkins	10	8	17.1	0
Jefferson	11	11	12.2	3
Johnson	2	2	21.5	0
Knox	18	14	13.2	1
Loudon	7	7	20.7	0
Lee,VA	3	3	34.3	0
McMinn	7	6	21.1	1
Marion	7	6	21.8	1
Meigs	8	5	21.4	0
Monroe	10	6	17.7	0
Morgan	7	7	21.6	0
Polk	9	7	15.9	1
Rhea	9	6	18.5	1
Roane	5	4	27.8	0
Scott,TN	6	5	25.0	0
Sequatchie	3	2	14.0	2
Sevier	11	10	18.1	0
Sullivan	8	5	10.1	1
Russell,VA	2	2	11.7	1
Scott,VA	1	1	21.0	0
Unicoi	2	0	N/A	0
Washington, TN	5	3	10.8	2
Washington, VA	4	3	16.5	0
Wise, VA	4	2	27.0	0
CWA TOTAL	**280**	**213**	**17.1**	**25**

No Tornadoes in 1999 Across the Morristown Area

(Continued from page 4)

The severe weather season started early on January 17th and 18th when a squall line move into the MRX CWA and produced mostly large hail up to golfball size, and some wind damage. The early part of spring was exceptionally quiet, with no warnings issued in February and March, and only 13 in April. Then on May 5th and 6th another squall line moved through east Tennessee and caused over $272,000 dollars worth in damages. That was the start of a very active month, including large severe weather events on May 7th with hail up to golfball size and wind damage in Knox, Hancock, and Lee counties, and May 13th with hail again up to golfball size and wind damage in White Pine. June 2nd saw another large severe weather event across the central and northern valley regions with mainly tree damage from straight line winds. There were several days during July and August that saw widespread "pulse" severe thunderstorms including July 6th, 7th, 24th, 27th, 28th and 29th, as well as August 1st, and 23rd. Most of the severe weather associated with these events was isolated wind damage of trees and a couple of roofs.

Despite the events listed above, it was a fairly quiet severe weather season for the MRX CWA. Through October 15th, there have been no tornadoes in the CWA. This marks the first time since 1988, that the CWA went a year without a tornado. The 280 warnings through September 30th is the lowest total for MRX since we took over responsibility in 1995. The previous low was 326 warnings in 1996. Of course, we still have get through November and December.

Flood Watches and Warnings

(Continued from page 3)

NEVER drive or walk through flooded areas. Most people who die in floods, die in their cars.

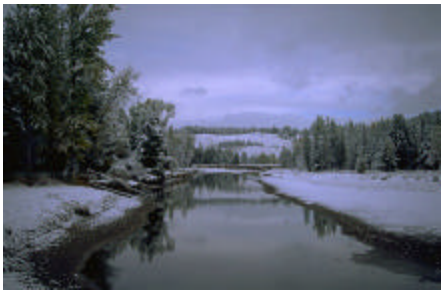
The last kind of flooding that occurs is general inundation. Sometimes an area will receive moderate rains over an extended time, and the ground just can't hold any more water. Excess rains then begin to pond and low-lying areas experience general flooding. This is mostly a nuisance to people living in or traveling through the area.

NEVER drive or walk through flooded areas. Most people who die in floods, die in their cars. Many people have died because they drove into shallow running water, only to find out too late that the water was deep and the road was washed away beneath it.

The National Weather Service in Morristown issues several different water-related products. A "Flood Watch" or "Flash Flood Watch" means that flooding or flash flooding is possible in the given area. You should monitor the situation and be prepared. These have been issued while the sun is still shining. Don't be lulled into thinking that there is no danger. A "Flood Warning" or "Flash Flood Warning" is issued when flooding is reported or the forecasters believe it's about to happen soon. Stay out of the warned area! Be prepared to move to higher ground immediately!

An "Urban and Small Stream Flood Advisory" means that urban or small stream flooding (explained above) is happening or about to happen. Keep an eye out if you are traveling or living in the area. Don't drive into flooded underpasses! You might get hurt or killed. You will at least be embarrassed by the picture of you on top of your car on the evening TV news, waiting for the rescue squad.

A "River Statement" is issued when a river is expected to rise significantly within its banks, but is not expected to flood. It can put people's minds at ease about the river. But be cautious! This can turn into a flood warning if the river rises higher than expected.



One more item: we need snow spotters! Snow melt is normally not a problem in our region, but we have had floods in the last three years which were made much worse because of rain on top of heavy snow. The number to call to report snow is the same toll-free number as above.

Thanks to all of you who give your time and talents to serve the community. We could not do our job without you.

National Weather Service
Morristown TN

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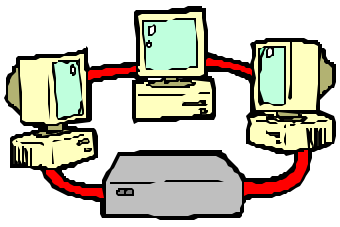
www.srh.noaa.gov/mrx

Final Phase of the Modernization of the NWS Completed!!!

Howard Waldron

The final phase of the modernization of the National Weather Service is to bring in more forecasters to each of the upgraded offices and the installation of a new computer system called the Advanced Weather Interactive Processing System, or AWIPS. The purpose of AWIPS is to bring all of the National Weather Service's information into one display system for the forecasters to use. This includes radar, satellite, surface observation data, computer generated model information and much more.



The installation of AWIPS and the addition of more forecasters, have completed

This final phase is now completed at all National Weather Service offices. We now have 14 meteorologist, six technicians, three electronics technicians, a service hydrologist and a secretary on staff. On July 15th, the NWS in Morristown assumed responsibility of issuing the one to five day forecast, and all long fused watches and warnings for southwest Virginia, east Tennessee, and Cherokee and Clay counties in southwest North Carolina. AWIPS is installed and everyone is trained in its operation. With AWIPS we have increased the speed at which we can access information and this will speed forecasts and warnings from the forecaster to the end user, meaning you.

The payoff for this great change in the weather service? For the period of 1986-1994, before we opened the office here in Morristown, there were 507 warnings issued. Over half these warnings were false alarms, and of the severe weather that occurred, less than half had warnings out prior to the event. This over-warning and under-detection was a reflection of the poor state of equipment the National Weather Service was working with prior to the modernization. This year alone, we have issued 280 warnings, less than one in four has been false alarms, and of the severe weather reported, we had warnings out for almost nine out of 10. We are extremely proud of the job the forecasters here in Morristown are doing. Looking at all offices nationwide, we are 6th in warning proficiency and at offices issuing more than 200 warnings, we're number 1.